

TEACHING IN AGRICULTURAL EXTENSION EDUCATION: CAN WE IMPROVE IT?



Among teaching, research and service in extension, teaching remains the most neglected. If we want to bring improvement in all these different dimensions of extension, we must pay serious attention to improving the quality of teaching in extension education, argues Dr. Mahesh Chander.

CONTEXT

Extension education basically deals with bringing about desirable changes in the behavior of human beings, through various strategies and programs, focusing more on education and information exchange. It is educational in content and purposive in approach. Its main aim is to assist rural communities in gaining a livelihood, improve the level of living (both physical and psychological), and foster welfare. The success of the extension process requires an atmosphere of mutual trust, helpfulness and respect on the part of both extension workers and rural people. This calls for a great deal of understanding on the part of extension workers, which is possible only when they possess sound knowledge of the subject. To successfully achieve this core objective of extension education, the teachers in extension education must be proficient enough, not only to teach but also to attract and orient students towards making them competent extension professionals.



The discipline of extension education largely draws subject matter, methods and tools from various areas of social science, such as: Sociology, Psychology, Anthropology, Administration, Communication etc. It is an independent full-fledged discipline like any other discipline in

agriculture, veterinary sciences, fisheries & home sciences such as agronomy, entomology, agricultural economics, Veterinary medicine, human nutrition etc. (Box 1).

Box 1: Extension Discipline: Evolution and growth

The word 'extension' is derived from the Latin roots, '*tensio*' meaning stretching and '*ex*' meaning out. The discipline of extension education has come a long way since 1873, when the term 'extension education' was first formally introduced by Cambridge University in England, describing it as a system dedicated to the dissemination of knowledge to rural people where they lived and worked. The concept later spread to other parts of Britain, Europe and North America. In the USA, 'agricultural extension' was adopted in 1914, when the United States Federal Smith-Lever Act of 1914 formalized a nationwide cooperative federal-state-county program and gave operational responsibility to the land grant colleges and Universities.

Agricultural extension later spread to Africa, the Caribbean, Asia and Latin America mostly due to the involvement of the USA through its several bilateral assistance programs launched after the Second World War. In India, the study of extension education as a subject was introduced for the first time at Agricultural College, Sabour (Bhagalpur), Bihar in 1953. With the establishment of the 1st Agricultural University at Pantnagar, on Land Grant Pattern of American universities with the assistance of the USA, the subject of agricultural extension was integrated as a discipline in Agricultural Universities offering Master's and Doctoral degrees in agriculture in India.

Faster spread of this discipline to meet the increasing demands of teaching departments of agricultural colleges that grew rapidly in the 50's and 60's adversely affected the quality of its content. The subject in fact, had not established its roots on sound foundation, when course outline and quality of teaching became a topic of concern. In 1967, a seminar was organized at IARI where model syllabus for undergraduate courses, was recommended, while, nothing significant was done for post-graduate courses then (Singh, 1981). A national seminar on 'orientation of extension education curriculum and strengthening functional linkages', organized at CSAUAT, Kanpur in 1981 was, perhaps, the first attempt that took stock of the post-graduate curricula and suggested various modifications (Sulaiman, 1996).

Now almost all State Agricultural Universities (62), deemed to be universities (5), Central Agricultural Universities (2) and Central Universities (4) with agriculture faculty either have Departments of Agricultural Extension or at least a few faculty members to teach extension education.

TEACHING IN EXTENSION EDUCATION

Every teacher irrespective of the subject/discipline has his or her own style of teaching. The teaching in extension education is no different. However, in the case of extension education, the main difference is the presence of several laboratories for extension students, such as: farmers' field, the agripreneurs, agro-processing centers, farmer producer organizations, extension and advisory services in the public, private and NGO sectors etc., where practical insights have to be gained by the students. Ideally teachers of extension education must first start with practicals in these laboratories before introducing theoretical aspects.

Teaching extension is about bi-directional learning, implying that the teacher also learns from the students during the course of teaching. The notion that farmers' field are the only laboratories for extension students, is changing as the extension professionals need to address the knowledge and information needs of the actors involved in the entire agricultural value chain. The farmers now ask advice beyond production, more on what to do once they have produced/harvested including opportunities for agripreneurship.



The effort to modernize the Extension and Advisory Services (EAS) programs, requires well-trained field agents and supervisors who know and can practice effective planning, deliver and evaluate teaching and learning. However, the EAS personnel in developing countries, typically have technical knowledge and skills, but very often lack preparation in the necessary teaching and learning skills that enables them to be successful extensionists (MEAS 2013). Extension and advisory services also needs to play a brokering role, promoting interactions and knowledge flows among the wide range of actors in the Agricultural Innovation System. Are we really preparing our students to meet these emerging professional requirements?

Challenges in Extension Education Teaching

Extension education being a 'field-oriented' professional discipline differs from other social science teaching in terms of its content and methods. Lack of adequate field-orientation and poor teaching standards have seriously hampered the credibility of the extension education discipline among educationists and development planners. This should be seen as a worrying point. Moreover, teaching of extension education subjects, at the undergraduate level has been disappointing and woeful in most of the cases causing a kind of dislike for this discipline among students. It is no secret that many bright students later do not opt this subject for post-graduation.

This situation must be taken seriously and teachers of extension education subjects should try to dispel the negative perception about extension education discipline by teaching the subjects in an interesting and exciting manner. Often, we limit our teaching methods to lectures only, occasionally supported by PowerPoint presentations. Year after year many teachers stick with the same content, same mode of teaching with same examples making it mundane, while teaching requires adapting. Effective teaching involves progressively refining our content based on reflection and feedback.



There are several challenges in teaching of extension in India. These are as follows:

- Shortage of faculty
- Teachers burdened with plenty of non-teaching activities
- Lack of induction training, required to orient faculty on teaching skills
- Lack of refresher courses
- Limited opportunities for practical sessions, including field experiences
- Non-availability of standard text books on various subjects under extension education
- Lack of adequate field exposure among faculty
- Outdated methods, tools and techniques
- Deficient curriculum which does not relate well with contemporary needs

Some of these are discussed in detail below.

Weaknesses in quality of teaching

Many SAUs are struggling with shortage of teachers in general. Extension Education departments in many universities are short of sanctioned strength. No wonder, in many veterinary colleges, non-qualified faculty in extension education subjects are engaged in teaching extension subjects like advanced research methods, Sociology, extension program

planning etc. Moreover, at many SAUs & ICAR deemed Universities, extension education faculty is often engaged or pre-occupied in many non-teaching tasks. For instance, at ICAR-Indian Veterinary Research Institute, there are only 4 scientists in the Division of Extension Education, who alongside teaching Master's & PhD students, also look after Krishi Vigyan Kendras (KVKs), and Agricultural Technology Information Centres (ATIC) as In-charges and a number of on-campus & off-campus training programs for various categories of stakeholders including farmers, trainers etc. The involvement of faculty in running KVK and ATIC, including field extension activities, leaves little time for quality teaching. The faculty also lack exposure on ways to provide and supplement their teaching with cases and contemporary examples.

Non-availability of standard text books on various subjects under agricultural extension is yet another serious problem. Many of the available books are just compilation of materials with no original style of writing, thus, making these monotonous to students. The recent initiative of ICAR to write a Handbook of Extension Education is an appreciable step, which may help in improving the content for extension education teachers.

Lack of induction training, required to orient faculty on teaching skills is also missing, though



some universities in recent times have taken step in this regard. The University Grants Commission, in pursuance of the National Policy on Education 1986 and its program of action, had set up 66 Academic Staff Colleges in different Universities/ Institutions across the country. The Academic Staff Colleges, regularly conduct specially designed orientation programs for newly appointed lecturers and refresher courses for in-service teachers. The extension education faculty should be encouraged to avail this good facility

to sharpen their teaching skills towards making teaching effective.

Recent initiatives to improve teaching quality

The 5th Dean's committee has emphasized capacity building of teachers in SAUs, specifically recommending, that SAUs should build up facilities for induction trainings of faculty for a period of at least 4 months. This should follow the pattern of ICAR-National Academy of Agricultural Research Management (NAARM) for Agricultural Research Services (ARS) scientists and focus on computer literacy, knowledge about national and international agriculture, curriculum development, financial and administrative rules and procedures, etc.

Appreciably the National Institute of Agricultural Extension Management (MANAGE), Hyderabad has recently initiated internship opportunity for PhD students in extension. Such opportunities can also be offered by Extension Education Institutes (EEl)s, State Agricultural Management and Extension Training Institute (SAMETIs), Agricultural Technology Application Research Institutes (ATARIs) & KVKs to orient students to various extension practices, research projects and extension programs. In fact, MANAGE, EEl)s, ATARIs & KVKs can be ideal institutions to impart practical opportunities to help extension students and newly recruited faculty in broadening their understanding and sharpening their skills in handling extension programs.



ICAR-NAARM, Hyderabad has recently launched a 4 week MOOC (Massive Open Online Course) on 'Competency Enhancement for Effective Teaching'. Courses like these could be a good opportunity for extension education faculty, especially to the young and aspiring to become effective teachers by development of psycho-pedagogical competencies (NAARM, 2016). On 30th January 2017, I saw few extension education faculty receiving certificates on completion of the first MOOC at NAARM. The faculty of extension education should avail such opportunities to improve teaching standards.

Many universities give recognition to good teachers. Teachers in extension education may enhance their competencies in teaching and bring prestige to the discipline.

Weaknesses in content

The curriculum needs changes to suit current and future requirements. Despite recent initiatives by ICAR to revise curricula including agricultural extension, those being followed in general and especially at the master's level are not relevant to meet the present and future challenges in extension. In 1996, a National Workshop on Post-Graduate Teaching in Social Sciences, was organized at NIAP (ICAR-National Institute of Agricultural Economics and Policy Research, New Delhi). This workshop found that the curricula followed at the Master's level

was 'insufficient' in view of the changing job scenario and 'lacking in competencies' to tackle emerging professional needs and challenges. The workshop also identified critical gaps in the curricula at master's level and recommended a thorough revision of the entire curriculum for introducing these changes (Sulaiman, 1996). Many of the recommendations from this workshop (NIAP, 2016)¹ have not been implemented till now.

While discussing how extension should be taught at the undergraduate, Master's and Doctoral level in India, Sulaiman and Van Den Ban (2000)² opined that major changes are needed to prepare students to work in a rapidly changing environment. They rightly said that extension education is in a crisis, because it has not yet adjusted to changes. As extension graduates are not prepared to perform the roles the market demands, they have difficulties to find jobs. In order to prepare the students for present needs, more training is needed in participatory extension approaches, organizing farmers' groups, planning extension strategies to meet farmers' needs, human resource development, agripreneurship and the use of information and communication technologies (ICTs). The students ought to learn how to apply theories in these



areas to field situations. For this purpose, not only agricultural graduates, but also other social scientists should participate in teaching extension. It should become clear which students will be trained to become an extension field worker, and extension manager or an extension researcher.

Globally there is an increasing interest in developing new capacities among extension and advisory services. This renewed interest emerged from the publication of 'The New Extensionist' position paper by the Global Forum for Rural Advisory Services (GFRAS). The position paper argues for an expanded role for EAS within agricultural innovation systems (AIS) and development of new capacities at different levels to play this role. 'The New Extensionist' vision implies changes in EAS organizations, systems, and enabling environments, plus re-skilling all types of individuals to better contribute to increasing the productivity and effectiveness of agricultural systems to improve the livelihoods of farmers (GFRAS 2012). GFRAS is currently developing the New Extensionist Learning Kit- a learning resource for individual extension field staff, managers, and lecturers. It contains 13 modules that have been identified by the GFRAS Consortium on

¹ http://www.ncap.res.in/upload_files/workshop/wsp3.pdf

² <http://www.tandfonline.com/doi/abs/10.1080/13892240008438808>

Extension Education and Training, as core competencies for individual extension agents³. The kit focuses on functional skills and will be available for self-directed, face-to-face, or blended learning, towards the middle of 2017 (Box 2).

Box2: New Extensionist Learning Kit: List of Modules and Competencies Required (GFRAS, 2016)	
Module1: Introduction to the New Extensionist	Module 8: Community Mobilisation
Module 2: Extension Approaches and Tools	Module 9: Farmer Organizational Development
Module 3: Agricultural Extension Programme Management	Module 10: The Role of Extension in Supporting Value Chains (Part 1)
Module 4: Professional Ethics	Module 10: The Role of Extension in Supporting Value Chains (Part 2)
Module 5: Adult Education for Behavior Change	Module 11: Agricultural Entrepreneurship
Module 6: Basic Knowledge Management and Extension	Module 12: Gender in Extension and Advisory Services
Module 7: Introduction to Facilitation for Development	Module13: Risk Management and Adaptation in Extension and Advisory Services

However, many of these new areas where capacities need to be developed among extension professionals, are yet to figure in the recent curricula reforms in India.

Recent extension curricula reforms in India

Recognizing the need that agricultural education has to evolve in tune with fast changing national and international scenario, ICAR embarked upon an arduous task of restructuring the undergraduate courses by constituting 5th Dean's Committee. The Committee restructured course curricula to be implemented from the 2016-17 academic session (PIB, 2016). This shows the intent of ICAR, towards emphasizing a professional approach in agriculture education, right from under-graduate courses of different streams of agriculture. The changes have reoriented the system to develop needed skills and entrepreneurial mindset among the graduates to take up self-employment, contribute to enhanced rural livelihood and food security, sustainability of agriculture and propel agricultural transformation.

The new courses added at the undergraduate level in BSc Agriculture program including restructured content (Table 1), if taught properly, can prepare students to be good extension personnel. The extension teachers will have to play a proactive role in engaging students in such a way that they find the subject interesting and they develop a liking for it. The new courses like 'Entrepreneurship Development' and 'Business Communication', as also the 'Communication Skills and Personality Development', give an edge to extension education faculty over other faculty in agriculture, thus, it should be seen as one good opportunity to

³ <https://www.g-fras.org/en/component/phocadownload/category/65-counting-only.html?download=455:new-extensionist-learning-kit-list-of-modules-and-competencies-required>

draw students to the extension discipline by making teaching and learning an exciting experience for students.

Table: 1: Extension courses approved for BSc Agriculture program

No	Title	Credits
1	Fundamentals of Agricultural Extension Education	3 (2+1)
2	Rural Sociology & Educational Psychology	2 (2 +0)
3	Entrepreneurship Development and Business Communication	2 (1+1)
4	Communication Skills and Personality Development	2 (1+1)

The ICAR appreciably also revised the course curricula and syllabi of post-graduate (master's and doctoral) education in agriculture and allied sciences at the national level during 2009 (ICAR, 2009). In Social Sciences group, the course structure and course contents have been developed for three programs namely Agri-business Management, Agricultural Economics, and Agricultural Extension. Agri-business program has been introduced for the first time, while new courses have been added by updating many existing courses in Agricultural Economics and Agricultural Extension programs in tune with the changing time and future needs (Box 3).

Box 3: Revised Curricula in Agricultural/Veterinary at PG Level in Extension Education

In order to keep pace with changing time and future needs, the courses in Agricultural⁵/Veterinary Extension⁶ were redesigned and updated by ICAR in 2009, wherein:

- New courses have been introduced to keep pace with the latest developments. Courses like Entrepreneurship Development and Management in Extension, E-extension, Media Management, Market-led Extension, Gender Sensitization for Development and Disaster Management are added that are truly need based.
- Course objectives and suggested readings have been provided for each course. This is a good effort which may need continuous updating.
- List of Journals have been given to keep pace with latest developments in the area. It can be further strengthened by incorporating more multidisciplinary journals. An exhaustive list of journals where extension faculty could publish has been compiled by AESA (Agricultural Extension in South Asia)⁴.
- Suggested broad areas of research have been added for providing directions to future research in the area^{5&6}.

While framing the new and restructured post-graduate curricula and syllabi for social sciences in agriculture including agricultural extension, it has been underscored, that the discipline of extension needs proper infrastructure, trained teachers, and computers with internet connections. The facility and availability of equipment, experts/guest lectures with industry, farm and village visits, have been emphasized to provide real life exposure to the students⁵.

⁴ <http://www.crispindia.org/Where%20we%20can%20publish%20extension%20research%20-%20Final%20Note%20%281%29.pdf>

⁵ (<https://drive.google.com/file/d/0B0TX5SvS4IMRNEdVbGpwSFirWTQ/view>)

⁶ (<https://drive.google.com/file/d/0B0TX5SvS4IMRRHINLxpEQWYzWkU/view>)

A cursory look at these new courses and updating of content gives an impression that more changes are required to modernize EAS to keep pace with the developments. In this context, modules and competencies required, as identified in New Extensionist Learning Kit of GFRAS (GFRAS, 2016) could be one good guide to shape the courses and content in future.

HOW TO MAKE EXTENSION TEACHING EXCITING?

Teaching is a challenging task. If the learner hasn't learnt, the teacher hasn't taught!! A teacher has the major responsibility for making classroom teaching effective and stimulating. As teachers, we need to inspire students right from the UG level that they get attracted to the discipline and consider it a subject of choice for Master's program.

Be an effective teacher

Extension teachers should be well aware of the general requirements which help in making classroom teaching a rewarding learning experience for both –teachers & students (Box 4). The conditions necessary for effective use of teaching methods include the learning situation, which comprises of the teacher who has clear objectives, knows the subject matter and is able to communicate freely with the learners. For effective teaching, the learning objectives should be clear and focused. Teaching is more effective and student learning is enhanced when (a) we, as instructors, articulate a clear set of learning objectives (i.e., the knowledge and skills that we expect students to demonstrate by the end of a course); (b) the instructional activities (e.g., case studies, labs, discussions, readings) support these learning objectives by providing goal-oriented practice; and (c) the assessments (e.g., tests, papers, problem sets, performances) provide opportunities for students to demonstrate and practice the knowledge and skills articulated in the objectives, and for instructors to offer targeted feedback that can guide further learning. The teachers in extension education, can assess themselves, where they stand vis-à-vis the required traits in a good teacher (Box 4).

Box 4: Qualities of effective teachers

For students, it matters much, that the teacher, in general should possess the following traits:

- Knowledge and understanding of the subject
- Enthusiasm about the subject
- Interest in students
- Knowledge of teaching skills
- Broad interest and engaging personality
- Demanding
- Give respect to students, value their opinion
- Encourages and motivates

The following attributes may help click in classroom teaching:

- Maintaining oneself good fitness & dressing
- Entertaining by giving interesting examples from day to day life
- Ability to control the class & self control
- Making classes interesting experiences

- Knowing the students well
- Punctuality
- Preparing well for the class
- Knowing well the subject being handled
- Having broader outlook
- Good command over language

Practice what you preach

We the teachers in extension education, often talk of teaching learning situations and using tools and techniques like role play, games and exercises to supplement theoretical concepts. However, often we fail to use and integrate them in our own teaching activities. Also, lack of field exposure or practical opportunities is a serious drawback. The students should be taken to various types of farms and agri-ventures, producer organizations etc. for exposing them to field realities, while explaining the theoretical concepts. Suppose we want to teach them livestock entrepreneurship, they must get an opportunity to meet and interact with some enterprising farmers including agripreneurs to familiarize with the concept. We can add value to teaching by using games, exercises, role plays etc. Also, in classroom teaching, questioning, listening and responding are three important activities, which need to be encouraged. On many counts in many of the colleges we find majority of teachers in extension education, deficient which could make their teaching effective.



Use Reflections and Feedback

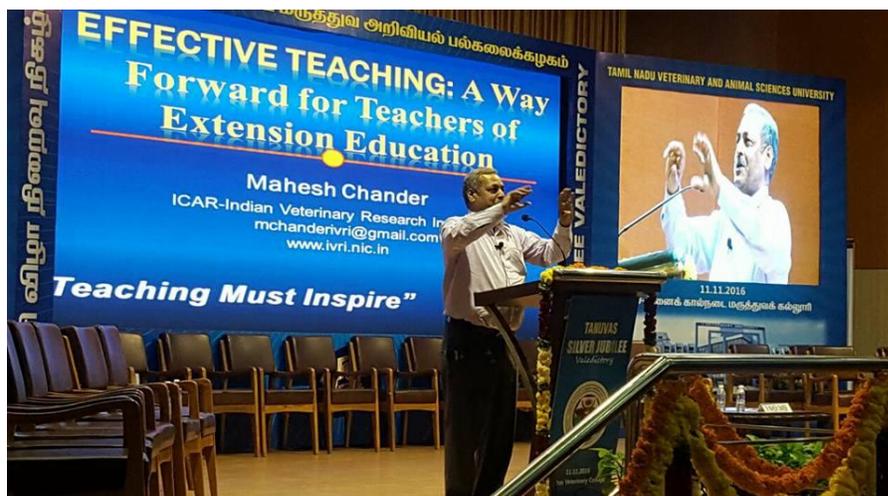
We need to continually reflect on our teaching and be ready to make changes whenever appropriate (e.g., something is not working, we want to try something new, the student population has changed, or there are emerging issues in our fields). We need to critically evaluate our own teaching effectiveness on a continuous basis. Much of this information exists

in the form of students' work, previous semesters' course evaluations, dynamics of class participation, etc. We can always seek additional feedback with help from the university teaching center (e.g., interpreting early course evaluations, conducting focus group discussions, designing pre- and post-tests). Based on these, we should modify the learning objectives, content, structure/ format of a course, or otherwise adapt our teaching methods and styles.

We must make it a point to take students' feedback on our teaching. It could be during the class, at the end of the class and finally at the end of the course i.e. on the last day of the session. Proforma to procure written feedback are available online, which should be adapted to the situation.

WAYS FORWARD

1. The initiative by ICAR on Common Academic Regulations, Course Curricula and Syllabi for Post-graduate (Masters' and Doctoral) Education in Agriculture and Allied Sciences including implementation of 5th Dean's Committee report on undergraduate agricultural education is laudable. This could at least come out with uniformity in syllabus, courses, content, rules and regulations. However, these need constant monitoring, changes and updating at least on a 5 yearly basis as requirements are changing rapidly. While restructuring courses and content, the global experiences in this area like the initiatives of GFRAS & MEAS should also be considered towards modernizing EAS.
2. Capacity building of teachers needs serious attention, for which induction training, refresher courses including overseas training at known world-class training academies may be facilitated.
3. Standard text books on extension subjects should be written by experienced and accomplished extensionists. The ICAR has provision for text book writing, but many qualified and experienced professionals do not come forward to avail this provision. May be by enhancing the honorarium, they can attract good authors.



4. Shortage of faculty, coupled with burdening teachers with multiple non-teaching assignments hampers quality of teaching. The SAUs should give attention to faculty recruitment.
5. The faculty and students need wide exposure to different organizations concerned with agriculture & rural development, besides, the farmers' field and agripreneurs.
6. Instead of seminars and conferences, small group meetings of eminent extensionists and workshops may be organized to have focused discussions on improving, refining, updating methods, tools and techniques of extension teaching and research.

We know most of the teachers in extension education or for that matter in many other disciplines, are not teachers by choice but by default. Whatever might have been the reasons or compulsions to become teacher, once we are a teacher we must do justice to the job we are supposed to perform. We need to work hard on preparing ourselves to be good teachers by equipping ourselves with the knowledge, skills, art and science of teaching.

Finally, a teacher can Tell, Teach or Inspire!! While teaching in a class. I wish to teach in such a way that I am remembered for my good teaching for many years after the students leave college. Also, when they are in my class, they should think, if they ever become teachers, they would like to be a teacher like me. If I am successful in giving this feeling to my students then I can feel that I could inspire them and my efforts in teaching were successful. Truly, teaching shouldn't be telling or teaching but INSPIRING!!!

Go to the people. Live with them. Learn from them. Love them. Start with what they know. Plan with them. Build with what they have. Teach by showing. Learn by doing. When the best leaders' work is done, the task accomplished, the people will say "we have done it ourselves."

-Lao Tzu, founder of Tao philosophy, 700 B.C.

Teaching must inspire!

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*Dr Mahesh Chander, is Principal Scientist & Head, Division of Extension Education at ICAR - Indian Veterinary Research Institute, Izatnagar-243 122 (UP) India.
Email: mchanderivri@gmail.com*

**AESA Secretariat: Centre for Research on Innovation and Science Policy (CRISP),
Road No 10, Banjara Hills, Hyderabad 500034, India
www.aesa-gfras.net Email: aesanetwork@gmail.com**